

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Enterprise Wireless Alliance and)	
Pacific Datavision, Inc.)	
)	
Petition for Rulemaking)	RM-11738
re Realignment of the)	
900 MHz Spectrum)	

COMMENTS OF NEXTERA ENERGY, INC.

NextEra Energy, Inc. ("NextEra"), by its counsel and pursuant to Rule 1.405(a) of the Commission's Rules (47 C.F.R. §1.405(a)), hereby submits its comments in opposition to the Petition for Rulemaking ("Petition") filed by the Enterprise Wireless Alliance and Pacific Datavision, Inc. ("EWA/PDV")¹ and in response to questions raised in Public Notice DA 14-1723 in the above-captioned proceeding.² NextEra and its subsidiaries are the holders of numerous Federal Communications Commission ("FCC" or "Commission") wireless licenses in the 900 MHz band.³

NextEra is an energy company that includes Florida Power & Light Company, the largest Florida electric utility with 4.7 million customers, and a host of electricity generation, transmission, and retail assets in 27 states and Canada. NextEra subsidiary NextEra Energy Resources, LLC is the largest producer of renewable energy from the wind and sun in North America.

¹ Petition for Rulemaking of the Enterprise Wireless Alliance and Pacific DataVision, Inc., filed Nov. 17, 2014 ("Petition").

² *Wireless Telecommunications Bureau Seeks Comment on Enterprise Wireless Alliance and Pacific DataVision, Inc. Petition for Rulemaking Regarding Realignment of 900 MHz Spectrum*, RM-11738, Public Notice, DA 14-1723, rel. Nov. 26, 2014 ("Notice") at 2.

³ NextEra subsidiary Florida Power & Light Co. ("FPL") holds 105 Industrial/ Business Pool ("IG" *i.e.*, Business/Industrial/ Land Transportation ("B/ILT")) FCC wireless licenses, as well as 76 other FCC licenses. NextEra and its other NextEra subsidiaries hold numerous FCC wireless licenses, including 42 IG licenses.

I. Opposition to EWA/PDV Petition

NextEra opposes the EWA/PDV Petition because EWA and PDV are seeking to realign the 896-901/935-940 MHz (“900 MHz”)⁴ band to provide PDV with a new broadband play at the expense of other existing 900 MHz licensees like NextEra.⁵ In short, EWA and PDV are proposing to restructure the 900 MHz band to create a different business on the spectrum that is not allowed today. But this proposal would leave other current 900 MHz users with unresolved interference issues and less spectrum resources. PDV argues it will use less spectrum than it holds today, and this new realignment plan will more effectively improve the use of the entire spectrum band. The reality is that the spectrum PDV has obtained has been undeveloped for many years, and other 900 MHz licensees would have reduced use of the 900 MHz band as a result of the EWA/PDV proposal. PDV should develop this spectrum as currently licensed. In the alternative, if PDV does not have a business to develop these licenses as intended, it should release its spectrum to the FCC so that users with business needs in line with the Commission’s original intent for this spectrum can license and develop it.

A. Interference with 900 MHz Users

NextEra remains very concerned with the detrimental effects that the EWA/PDV proposal will have on existing 900 MHz users, especially interference, as recognized by the Petitioners.⁶ The most notable problem is that the incumbent land mobile radio (“LMR”) systems in large metropolitan areas will end up with frequencies (channels) more closely spaced under the proposed band plan.

⁴ 47 C.F.R. §90.601 *et seq.*

⁵ See Petition at ii-iii, 2-3; Notice at 1-2.

⁶ Letter of Elizabeth Sachs, Counsel for EWA/PDV, to Marlene H. Dortch, Secretary, FCC, RM -11738 (Dec. 30, 2014) (EWA/PDV *Ex Parte*) at 6..

This channel compression will impinge on the performance of the user community for a multitude of technical reasons. Closer spectrum spacing will require more complex, higher loss antenna systems, which will increase the number of required sites by 200% or more. Closer spectrum spacing will impact current users further due to interference and ducting that occurs naturally and periodically in the current environment. The current 900 MHz band plan provides for operating alternatives that address interference, which will not be available in the plan proposed by EWA/PDV. NextEra evaluated the original FCC 900 MHz band plan and took these interference issues into consideration in engineering its frequency plans. These efforts reduced interference by allowing larger physical (topographical) separation of the adjacent frequencies.

In addition, existing 900 MHz narrowband systems are designed and operated as “noise limited” systems, meaning a few high base station sites are used to cover large geographical areas. Broadband LTE systems are designed and operated as “interference limited” systems, meaning myriad base stations are located in close spacing at “ground level”. Because of this, as happened when the Nextel system was constructed on 800 MHz channels, the base station transmit frequencies (in the case of LTE, a 3 MHz wide spectrum) are immediately adjacent to mobile and control station receive frequencies. Unlike Nextel which used narrow band channels that were directly adjacent to public safety users and other narrow band channels, this PDV proposed broadband LTE system will be immediately adjacent to the remaining 2 MHz of spectrum. Even though out of band emissions can be shown to be within FCC guidelines, the allowed levels will be enough to desensitize narrowband receivers to at least 250 KHz from the LTE band edge and probably more, further reducing the available remaining spectrum for narrowband users.

It is unclear at best how the EWA/PDV proposal will take these issues into consideration and avoid impingement on user performance since the EWA/PDV Petition provides no proposed

technical rules or standards, clearly counter to the public interest and failing to meet the Commission's requirements for a petition for rulemaking and institution of a rulemaking proceeding.⁷ It appears emissions mask requirements will result in an additional loss of spectrum to both PDV and the land mobile radio ("LMR") 2 X 2 MHz user, *e.g.*, electric utilities, which actually means the incumbent LMR user will end up with less than the proposed 2 x 2 MHz in order to reduce the interference with other users through spectrum separation.

NextEra does not believe the proposed guard band will be enough to isolate interference due to the proposed adjacent RF noise that is inherent to broadband LTE-type emissions generated outside of the licensed 900 MHz spectrum. As a result, the guard band is not separated enough to allow broadband operations for the proposed Private Enterprise Broadband ("PEBB") licensees. PDV will be expected to allow for a 150 KHz guard band. In addition, there may be a need for the 2 x 2 MHz users to provide 150 KHz guard band from that part of the band, which will decrease the number of channels available to the current 900 MHz narrowband licensees from the proposed 160 to 148 channels, further reducing the available channels and at the same time, increasing congestion.

NextEra notes that typical guard band allocations at 700 MHz are 1 MHz, making the 150 KHz proposal likely inadequate. See diagram below of interference scenarios for the current 700 MHz band plan and associated guard bands.⁸

⁷ See 47 C.F.R. §1.401(c) (stating that a petition for rulemaking shall set forth the text or substance of the proposed rule, together with all facts, views, arguments and data deemed to support the action requested); 47 C.F.R. §1.407 (requiring sufficient reasons for a Commission determination to justify institution of a rulemaking proceeding"); *see also Letter to Alan S. Tilles, Esq.*, DA 07-3382, 22 FCC Rcd. 13577 (2007) (denying petition for rulemaking when proposed redesignation of spectrum would yield minimum benefits and increase potential harmful interference and lacked sufficient details).

⁸ See 4G Americas Report, "The Benefits of Digital Dividend." September 2012 at 13 (Figure 2) at [http://www.4gamericas.org/documents/4G%20Americas-Benefits%20of%20Digital%20Dividend-September 2012.pdf](http://www.4gamericas.org/documents/4G%20Americas-Benefits%20of%20Digital%20Dividend-September%202012.pdf) (viewed on Jan. 6, 2015).

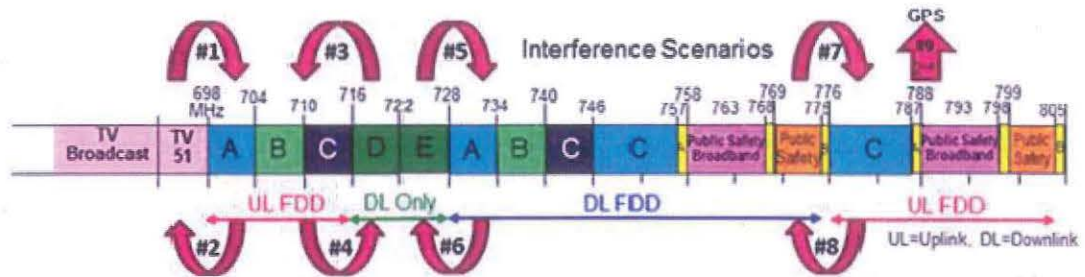


Figure 2: Interference scenarios for the U.S. 700 MHz band plan

Further, NextEra anticipates that the adjacent interference issue will exacerbate over time as additional licensees are compressed into the 2 x 2 MHz channels for narrowband voice per the proposal. As a result, NextEra recommends that the FCC require PDV and its successors in interest to address these interference issues and propose appropriate technical rules before the Commission can consider moving forward on this Petition.

B. Impact on Critical Infrastructure

In the end, the EWA/PDV proposal appears to be a short-sighted attempt to convince the FCC and the 900 MHz user community to adopt a seemingly more efficient use of spectrum that will not provide the instant emergency access communications, long range transmissions, and easily restored LMR two-way radio systems that utilities use for their critical restoration communications for electric systems with the necessary levels of availability and reliability. At present, electric utilities have engineered robust, seamless critical infrastructures using primarily narrowband spectrum to facilitate daily dispatch operations and disaster recovery voice communications. The critical infrastructure system survival mechanisms allow utilities to be in control of service restoration based on dynamic requirements, but the proposal would not allow utilities to serve as administrators and have “time to fix” capabilities over the public carrier network.

Moreover, the existing narrowband voice communications system serves heavily populated urban areas, as well as suburban and rural communities. The Petitioners' proposed broadband solution will result in significant disruption to existing 900 MHz band users for a narrow solution that is not nationwide and will not provide ready solutions for all urban, suburban, and rural areas. In sum, the EWA/PDV proposal would not provide the promised reliability, priority access, and coverage that is required for utility 900 MHz band users.⁹

C. Financial Impact on Existing 900 MHz Users

There does not seem to be any advantage for the proposed broadband offering over utilities using existing commercial broadband service offerings presently available in the market. PDV has proposed a "build to suit" solution, which means the broadband solution will be paid for in part by the user. The upkeep and backhaul of the proposed broadband solution will be a user responsibility, and it is expected that backhaul and maintenance costs will increase for utility 900 MHz licensees due to the fact that the proposal will require close spacing of transmit frequencies and thereby more costly siting infrastructure. Also, the user will be charged a subscription fee, which appears to be similar to the current price charged utilities by commercial wireless carriers, but unlike the EWA/PDV proposal, the current service arrangement from commercial wireless carriers requires no financial responsibility to fund the infrastructure. In addition, if the user wants this infrastructure to be hardened for disaster survival, the user will pay increased charges under the EWA/PDV proposal.

If the Commission decides to move forward on the PDV proposal despite these shortcomings, it should require PDV to provide a complete business plan for the development of the spectrum, including the financial terms needed to remedy the relocation issues of current licensed users with deployed systems. NextEra and other wireless users that may be interested in PDV's proposed broadband offering may have no desire to use the spectrum if the proposed

⁹ See Petition at 2 (noting that utilities need broadband service with reliability, priority access, and coverage similar to that required by public safety users).

service offering is cost prohibitive or does not provide the reliability and the capabilities required for critical restoration communications. The lack of a business plan and associated cost requirements for 900 MHz users with this proposal further underscores the Petition's failure to satisfy the Commission's requirements for institution of a rulemaking proceeding.¹⁰

NextEra is also concerned that if the PDV proposal is approved and implemented but the company's business plan fails, PDV will sell the rebanded 900 MHz spectrum to other entities with adjacent licensed spectrum, at the expense of current 900 MHz licensees who are limited in their spectrum resources. Nothing in PDV's proposal would prevent PDV from transferring the 3 x 3 MHz being removed from the current 5 x 5 band MHz plan to adjacent spectrum licensees, and nothing in the history of PDV's principals would suggest such a scenario is outside the realm of probability. The net result of such a PDV spectrum sale would be that 50% of the current 900 MHz spectrum used by utility and other CII users is transferred to other licensees.

As a result, NextEra strongly recommends that the Commission apply restrictions on the transfer and future use of the rebanded 900 MHz spectrum, if approved as requested in the EWA/PDV Petition. Specifically, NextEra recommends that if this band is restructured as proposed in the Petition, the Commission should impose a restriction that the redefined 3 x 3 MHz block must be used consistent with the EWA/PDV proposal as approved by the Commission. If PDV fails to utilize the spectrum as approved by the Commission within three years of approval of the proposal, it must be returned to the Commission for the Commission to license to other entities.

¹⁰ See 47 C.F.R. §1.401(c); 47 C.F.R. §1.401(c).

II. Comment on Questions Raised in Public Notice, DA 14-1723

A. *What need do B/ILT entities, particularly CII entities, have for broadband services that can be provided over a 3/3 MHz channel and cannot be met by existing broadband service providers?*

In general, electric utilities and other critical infrastructure industries (“CII”) users need access to a highly reliable broadband network dedicated to support the growing need for high capacity IP networking interconnections that are required to execute critical command, control, and monitoring functions. Existing broadband service providers cannot provide the required network services for the exclusive use by the utilities and other CII users, nor can existing commercial wireless providers provide the consistent network availability and reliability that is critical in all cases and imperative in emergency situations. The utilities and other CII users need access to broadband RF spectrum in the sub one GHz band to establish their own dedicated broadband networks. This needed bandwidth should not be provided (as proposed in the EWA/PDV Petition) by sacrificing bandwidth already allocated to utilities for critical restoration communications.

B. *What functionality do these entities currently lack that could be provided pursuant to the proposed realignment?*

While the need for broadband IP networks with high availability and high reliability is increasing dramatically and is urgently needed to support the critical command, control, and monitoring functions of the electric delivery system, the spectrum resources currently available to utilities are not sufficient to meet the needs. Utilities need a broadband solution that would allow for the implementation of a broadband IP network capable of delivering both the high availability and the reliability required to support the critical command, control, and monitoring functions. Without this enhanced network capability, utilities are relegated to using inefficient and substandard commercial and other inefficient low bandwidth wireless services, resulting in suboptimum performance of the electric delivery system and potentially catastrophic failures in a worst case scenario. While utilities need secure and reliable broadband functionality, NextEra

reiterates that it does not believe the proposed realignment would achieve this goal for utilities.

C. *Does the need for such services exist nationwide?*

Yes, there is an urgent need for dedicated broadband spectrum in the sub one GHz band for exclusive use of utilities and other CII entities to allow them to support the critical command and control functions for the electric delivery system. This need is indeed nationwide to support the nationwide electric delivery systems in a safe, secure, and reliable manner. To this purpose, NextEra remains very interested in qualifying as a critical infrastructure service provider for the First Responder Network Authority (“FirstNet”)¹¹ in order to receive priority (guaranteed) access to the FirstNet national broadband public safety network, which represents the quality of broadband services needed for CII entities, as recognized by EWA/PDV.¹² Unlike the EWA/PDV proposal, NextEra believes FirstNet represents a potentially viable and robust long-term broadband solution needed for CII entities.

D. *In addition to realigning the band, what changes to the Commission’s technical rules would be required to enable the PEBB licensee to provide the contemplated broadband service?*

As discussed above, it is unclear what changes to the Commission’s technical rules would be required due to the lack of sufficient details in the EWA/PDV proposal. Prior to the FCC completing its review of the EWA/PDV request, the proponents must put forward a more comprehensive technical proposal with clear proposed rules. It is not possible to evaluate the merit of the instant EWA/PDV request without a defined and detailed technical plan. For example, EWA/PDV must provide information regarding the proposed infrastructure equipment needed to enable their proposed broadband solution. NextEra remains very concerned about the

¹¹ See *Implementing Public Safety Broadband Provisions of the Middle Class Tax Relief and Job Creation Act of 2012; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band; Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, PS Docket Nos. 12-94 and 06-229 and WT Docket No. 06-150, Second Report and Order, FCC 13-137 (rel. Oct. 28, 2013) (adopting consolidated technical service rules for the 758-769 and 788 and 799 MHz bands, licensed to FirstNet on a nationwide basis.).

¹² See Petition at 7.

lack of details in the EWA/PDV proposal, but recognizes that changes to the Commission's technical rules, including specific coordination guidelines, will be required in order to move forward if and when the necessary details for the EWA/PDV proposal are provided. Without these missing details, it is impossible for NextEra to recommend any needed changes to the Commission's technical rules at this time.

E. *What other rule changes would be needed to prevent interference between the PEBB licensee and adjacent-channel operations?*

If the Commission approves the proposed 900 MHz realignment, guard bands at the band edges of the Private Enterprise Broadband ("PEBB") licensee's band may be required to prevent interference between the PEBB licensee and adjacent channels. Addressing interference in this band is already a challenge. The addition of a 3 x 3 MHz LTE broadband solution through a PEBB licensee will exacerbate current interference issues and make them unmanageable.

F. *What are the estimated costs to relocate incumbents from the broadband segment to the narrowband segment?*

NextEra has not conducted a detailed cost analysis due to the limited information in the proposal put forward by PDV. But at a minimum, it would require the following: coordinating the frequency changes, coordinating the license changes, documenting the changes, developing the change procedures, providing additional training as required, implementing the changes, and updating the "as built" documentation. All antenna systems would require replacement to address the closer frequency spacing. Based on the vintage of NextEra's systems, all site and control hardware would have to be replaced. With reduced RF propagation and increased interference issues, the number of sites and the overall system capacity would need to be doubled at a minimum. This will entail a substantial site construction effort involving both NextEra owned and leased tower facilities. Since these are long-term needs, the EWA/PDV plan cannot be limited to a five-year remediation plan. The cost impact to electric utilities will be substantial and long-term (*i.e.*, over 25 years).

NextEra's capital impact alone is estimated at approximately \$70 to \$90 million, and the annual operating cost impact would be estimated at no less than \$7 to \$9 million. Even if the Petitioners finance these costs, as indicated in the Petition, there will be other real costs incurred by NextEra because its company personnel will have to be diverted away from their day-to-day normal activities to support the realignment activities. Other costs include those associated with the service interruptions and outages that would be experienced during the required frequency conversions, as well as the negative impact on the system users' ability to perform both routine and emergency work activities during these outages.

G. Will the narrowband segment accommodate all relocating licensees, even in congested areas?

This a very troubling question with an unknown answer at this time. If the EWA/PDV Petition is granted, the number of channels available for the B/ILT uses would be reduced from 199 currently available to 159 and all located in a continuous 2 x 2 MHz band. NextEra is currently having problems in highly congested areas today finding available non-interfering channels. Under the proposed channel reduction and with no inter-band spacing of the B/ILT channels as exists today, this situation will only get worse, and it may lead to no channels available for any expansion in highly congested areas.

Also, if closer spacing of channels requires, at a minimum, doubling of sites as appears likely, a doubling of required channels could also be required for radio systems that are "multicast" by design. These channels will not be available in the 900 MHz band, where currently 40% of the channels are in use and the unused remaining 60% of the licenses are owned by PDV and currently not in use. It is difficult, if not impossible, to determine where "comparable facilities" will come from in this case, which is a clear challenge that EWA and PDV recognize.¹³

¹³ See EWA/PDV *Ex Parte* at 6.

H. If the necessary changes to the technical rules are adopted to permit the contemplated broadband service, can the aggregation of spectrum to be accomplished by means other than the process proposed by Petitioners? For example, are existing secondary market rules sufficient to allow realignment that would effectively separate narrowband and broadband operations?

No comment at this time.

III. Conclusion

In view of the foregoing, the Commission should summarily reject EWA/PDV's Petition to realign the 900 MHz band and relocate existing licensees as contrary to the public interest. In addition, EWA/PDV's petition for rulemaking should be dismissed for lack of sufficient information to permit informed comment as required by the Commission's rules. At a minimum, the FCC should require EWA/PDV to provide the Commission and affected licensees with greater detail of the EWA/PDV proposal to relocate existing licensees within the 900 MHz band before initiating a formal rulemaking proceeding for this proposal.

Respectfully submitted,

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January 12, 2015

CERTIFICATE OF SERVICE

I, William P. Cox, do hereby certify that on this 12th day of January 2015, I caused copies of the foregoing "Comments of NextEra Energy, Inc." to be delivered to the following via First Class U.S. mail:

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